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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,531	09/15/2003	Hiroshi Watanabe	392.1818	8022

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EXAMINER	
MACKEY, JAMES P	

ART UNIT	PAPER NUMBER
1722	

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/661,531	WATANABE, HIROSHI	
	Examiner	Art Unit	
	James Mackey	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-9,11,12 and 16-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-9,11,12 and 16-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 12 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 12 apparently further defines the "load detecting means" of independent claim 7 by claiming "an observer", i.e. a person, which is non-statutory subject matter.

3. Claims 8, 9, 12 and 16-18 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Each of claims 8, 9, 12 and 16-18 merely recite the manner in which the claimed apparatus is intended to be utilized (e.g., what value is utilized as the "reference load" or set point; when the load detecting means performs its function; what is intended to occur during operation of the apparatus), and do not recite additional structure of the claimed apparatus; therefore, the claims do not further limit the subject matter of the apparatus claims. Note that intended use has been continuously held not to be germane to determining the patentability of the apparatus, *In re Finsterwalder*, 168 USPQ 530; the manner or method in which a machine is to be utilized is not germane to the issue of patentability of the machine itself, *In re Casey*, 152 USPQ 235.

Moreover, claim 12 only recites "an observer", which does not further recite structure for the claimed apparatus and therefore does not further limit the claimed subject matter.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 8, 9, 11, 12 and 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8, 9, 12 and 16-18 are indefinite as to exactly what structure of the claimed injection molding machine is intended to be claimed, since each of these claims only sets forth recitations regarding the manner in which the claimed machine is to be utilized during the intended operation.

Claim 11 is indefinite as to exactly how the recitation that "the load of the mold clamping servomotor is detected on the basis of a current value" relates to the "load detecting means" as recited in independent claim 7, and is indefinite as to exactly what apparatus structure is intended by the above recitation.

Claim 12 is indefinite as to exactly how the recitation that "is detected by an observer" relates to and cooperates with the "load detecting means" as recited in independent claim 7, and is indefinite as to exactly what apparatus structure is intended by the above recitation.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 7-9, 11, 12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Eggenberger et al. (U.S. Patent 3,642,405) or Speck et al. (U.S. Patent 4,832,884), in view of any one of Onishi (U.S. Patent 6,413,453; col. 3, line 39 through col. 4, line 4), Hiraoka (U.S. Patent 5,912,025; col. 3, lines 40-45), Siegrist et al. (U.S. Patent 5,792,483; Figure 16; col. 20, lines 32-37) and Silvey (U.S. Patent 5,469,038; col. 5, lines 52-61).

Eggenberger et al. and Speck et al. each disclose an injection molding machine comprising a toggle clamping apparatus between a movable platen and a rear platen, clamping force detecting means for detecting the clamping force acting on the toggle clamping apparatus (Eggenberger et al. disclose means for detecting "the driving power to be expended by the driving motor for closing the mold" via the toggle mechanism, see especially col. 2, lines 8-10; and Speck et al. disclose "a measuring device to measure the actual closing force", col. 2, lines 5-6, the measuring means being sensors on the toggle levers, col. 3, lines 23-24, such that the actual value of the closing force is measured at the toggle joint, col. 4, lines 4-5), and mold clamping force adjusting means which adjusts a position of the rear platen according to a difference between the measured mold clamping force and a predetermined reference (i.e., set point) mold clamping force, except for the detecting means detecting the load acting on a

servomotor actuator which moves the toggle clamping mechanism, with the clamping force adjusting means being responsive to this measured load of the mold clamping servomotor.

Onishi (note current detector 40 for servomotor 18, reading on the detected current value of the servomotor as claimed in dependent claim 11), Hiraoka, Siegrist et al. and Silvey each discloses an injection molding machine comprising a toggle clamping apparatus driven by a mold clamping servomotor actuator, and further discloses the correlation between the clamping force and the servomotor current load. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify either Eggenberger et al. or Speck et al. by providing the mold clamping force adjusting means responsive to means for detecting the load of a mold clamping servomotor actuator for the toggle clamping apparatus, since a skilled artisan would have recognized the correlation between mold clamping force and toggle servomotor load, as evidenced by any one of Onishi, Hiraoka, Siegrist et al. and Silvey. With regard to the claim recitations of when the detecting means detects the load acting on the clamping servomotor ("during mold unclamping" in independent claim 7; "during mold clamping" in dependent claim 9), the detecting means of the prior art are clearly capable of being used to detect the clamping force/load at any time, dependent only on the intended use of the claimed apparatus structure. Note that intended use has been continuously held not to be germane to determining the patentability of the apparatus, *In re Finsterwalder*, 168 USPQ 530; the manner or method in which a machine is to be utilized is not germane to the issue of patentability of the machine itself, *In re Casey*, 152 USPQ 235. Moreover, to the extent that the manner of operating the injection molding machine as recited in claims 8, 12 and 16-18 further define any structure of the claimed apparatus, such would have been obvious to a skilled artisan and well within the level of

ordinary skill in the art based on the collective teachings of Eggenberger et al., Speck et al., Onishi, Hiraoka, Siegrist et al. and Silvey (for example, see the explicit teaching of the use of an alarm in Eggenberger et al. at col. 7, lines 27-28 and col. 9, line 35; and in Speck et al. at col. 3, line 67). Note that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations, *Ex parte Masham*, 2 USPQ2d 1647.

9. Applicant's arguments filed 23 January 2006 have been fully considered but they are not persuasive.

Applicant argues that the prior art of record does not suggest measuring the load acting on the toggle servomotor "during mold unclamping", while the mold cavity is filled with resin; however, the prior art suggests means for measuring the load acting on the toggle servomotor and mold clamping force adjusting means which adjusts the position of the rear platen responsive to the detected load, and the detecting means is capable of measuring the servomotor load at any time, dependent only on the intended use of the claimed apparatus, which does not patentably distinguish apparatus structure. Moreover, it must be noted that the claimed detecting means and adjusting means are intended to be operated not only "during mold unclamping" (as recited in independent claim 7) but also "during mold clamping" (as recited in dependent claim 9), demonstrating that the same means are capable of use at either time dependent only on the intended use of the claimed apparatus structure.

Applicant argues that the claimed adjusting means responsive to a toggle servomotor load detecting means is superior to the traditional toggle control based on the rotational position of the toggle servomotor. However, the cited prior art does not rely on servomotor positional control.

Onishi suggests clamping force control based on measurements of the toggle servomotor current load measured by current detector 40 (col. 3, line 39 through col. 4, line 4); Hiraoka suggests clamping force control based on the torque of the toggle servomotor (col. 3, lines 40-45); Siegrist et al. suggest clamping force control based on toggle servomotor current Ms (Figure 16 and col. 20, lines 32-37); and Silvey suggests clamping force control based on the toggle servomotor current/torque (the abstract and col. 5, lines 52-61). It would have been obvious to a skilled artisan to modify the apparatus of either Eggenberger et al. or Speck et al. by providing the rear platen position adjusting means responsive to means for detecting the load on the toggle servomotor to thereby control the mold clamping force, as suggested by each of Onishi, Hiraoka, Siegrist et al. and Silvey.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Mackey whose telephone number is 571-272-1135. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James Mackey
Primary Examiner
Art Unit 1722
3/29/06

jpm
March 29, 2006